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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,801	10/21/2005	Santiago Miguel Sanz	TJA-112US	7391
23122	7590	06/02/2010		
RATNERPRESTIA P.O. BOX 980 VALLEY FORGE, PA 19482			EXAMINER HOGUE, DENNIS A	
			ART UNIT 2622	PAPER NUMBER
			MAIL DATE 06/02/2010	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/526,801

Applicant(s)

MIGUEL SANZ ET AL.

Examiner

DENNIS HOGUE

Art Unit

2622

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 106-121 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 106, 108, 110-114, and 116-121 is/are rejected.
- 7) ☒ Claim(s) 107, 109 and 115 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB06)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ ~~Notice of Informal Patent Application~~
- 6) ☐ Other: _____

DETAILED ACTION

1. This is the fourth Office Action based on the 10/526,801 application filed 3/7/2005. Claims 106-121 are currently pending and have been considered below. Claims 1-105 have been cancelled.

Remarks

2. The currently presented claim set presents several claim terms, such as first releasable fixation member, first centering member, and releasable fixation portions, that do not appear in the specification and it is difficult to determine to which elements these claim terms refer and their relationship to other terms that are set forth in the specification such as positioning means, releasable fixation means, and focusing means. In the examiner's opinion, this is at least partly due to the specification being confusing, likely due to a poor translation. The specification sets forth positioning means and focusing means, which appear to be used interchangeably (in the advisory action, the examiner stated that the specification used positioning means and releasable fixation means interchangeably, but this was incorrect). This is confusing for two reasons: 1) the focusing means appears to have nothing to do with focusing; and 2) the examiner can see no reason to use two names if the two means are identical.

Regarding the confusing use of the word "focusing", see the priority document, PCT/ES03/00240 p. 4 lines 18-20, which states in Spanish that the positioning means facilitates the centering of the optical system 8. That is, the use of "focusing" in the US application is a mistranslation and the word centering is proper. Therefore, the examiner

recommends amending the specification to change "focusing of said optical system" to "centering of said optical system" (suggested specification amendments are listed below). Further, for clarity, the examiner recommends changing "focusing means" to "positioning means" because they appear to refer to the same means (again, see below for suggested amendments to the specification).

3. Regarding another confusing aspect of the specification language, the specification sets forth that the housing comprises positioning means and releasable fixation means, and that the mounting adapter also comprises positioning means and releasable fixation means. Thus the terms positioning means and releasable fixation means as used in the specification are somewhat ambiguous. The examiner suggests amendments to the language of the specification below to make the disclosure more clear in this regard.

4. To be clear as to how the examiner believes the claim terms map to the specification, the examiner construes the positioning means of the housing to be the first centering member of the claims (stubs 23, or the plug around support 7), and the releasable fixation means of the housing to be the first releasable fixation member of the claims (the shoulders of the housing 1 or holes for screws). The examiner construes the positioning means of the mounting adapter to be the second centering member of the claims (support members 24 having holes 25, or a tubular configuration of the mounting adapter 18), and the releasable fixation means of the mounting adapter to be the second releasable fixation member of the claims (elastic arms 21 and projections

22, screws, or form fitting) and also the releasable fixation portions of the claims (elastic pressurized fixation means 29, screws 37, or form fitting, or a combination thereof).

5. Regarding the use of "centering member" in the claims, which is a term which does not appear in the specification, the examiner does not consider this to be new matter because as stated above the priority document supports the use of the word "centering".

6. In view of the above, the examiner recommends making the following amendments to the specification for clarity. The examiner does not hold any of these changes to present new matter. If the Applicant does decide to make these changes, the examiner can email an electronic copy to the Applicant for convenience.

Abstract

An image acquisition module for monitoring the external surroundings of a vehicle is provided. The image acquisition module comprising a housing with a protected interior against at least moisture and a window hermetically closed by a transparent element; an electronic circuit accommodated in said housing and associated with connection means with the exterior for supply and for bidirectional signal exchange; an image detector connected to said electronic circuit and facing said window; a support attached to the housing to carry an optical system between said image detector and said window; and positioning and releasable fixation means to enable the ~~foecussing~~ centering of said optical system and the releasable fixation of the module to an exterior structure of a vehicle.

p. 2 lines 23-35

The image acquisition module for monitoring applications of the external surroundings of a vehicle consists of the following: a housing with a protected interior, at least from moisture and a hermetically closed window by a transparent element, which incorporates in its interior an electronic circuit associated with connecting means to the exterior, an image detector connected to said electronic circuit and opposed to said window, a supporting device connected to the mentioned housing to carry an optical system between the said image detector and the said window; as well as positioning means and releasable fixation means, in order to facilitate at least the ~~focussing~~ centering of said optical system and the releasable fixation of the module to an external structure of the vehicle. Furthermore, said module disposes of incorporated protection ~~means~~ protection means from external agents and luminous incidences, materialised in the form of a visor element, a car gutter, as well as conditioning means regarding the light pass through the mentioned transparent element.

p. 3 lines 1-8

A mounting adapter has been provided for, in which said visor element and car gutter are integrated, around its opening, in order to couple the housing to the mentioned external structure of a vehicle. Therefore, the mentioned mounting adapter comprises at least ~~focussing~~ positioning means and releasable fixation means for the fixation of the housing in cooperation ~~which~~ with said ~~focussing~~ positioning means and

said releasable fixation means of the housing, guaranteeing a predetermined location of said opening and the visor and car gutter elements in relation to the window, as well as releasable fixation means for the releasable fixation of said mounting adapter to said exterior structure of a vehicle.

p. 4 lines 17-19

- positioning means and releasable fixation means, in order to facilitate, at least, the ~~foeussing~~ centering of said optical system 8 and the releasable fixation of the module to an exterior structure 36 of a vehicle.

p. 4 line 34 to p. 5 line 4

An elastic sealing element 34 is disposed in compressed form between said external flange 31 of the optical system's body 8 and one end of the appendix ~~[[8]]~~ 16, with the aim to protect the accommodated components in the interior of the housing 1 from moisture. This protection is achieved, furthermore, by disposing the mentioned transparent element 35 between one end of the optical system 8 and one interior backing of a cover 17 coupled externally with said appendix 16, consisting said window 6 of an opening in the background wall of the cover ~~(+17)~~ 17.

p. 5 lines 12-30

The mentioned window is associated with protection ~~means~~ protection means from external agents and the luminous incidence, guaranteeing an appropriate light

pass through said transparent element 35. Said protection means are materialized in the form of a visor element 10 disposed around ~~of~~ at least a part of said window 6, acting as a protection in case of rain, avoiding the incidence of rain drops on the window, and, furthermore, ~~will to protect the~~ camera from the sunrays, a car gutter element 27 ~~is~~ disposed around ~~of~~ at least a part of said window 6, offering a way out for water in the mentioned case of rain, projecting water to the ground and avoiding water from accumulating in front of the window. Said visor element 10 together with said car gutter will form, in case both of them together surround completely the window 6, a front depression 19 (FIGS. 8 and 9), that in a preferred embodiment could be extended into a tubular configuration 20 (see FIG. 9) externally connected to a plug around the mentioned support 7 for the optical system 8. Said window 6 is, furthermore, associated with conditioning means of the ~~enditions~~ conditions of the light pass through said transparent element 35, avoiding in particular steam and ice deposit, and that ~~ing~~ comprise comprises an electrical heating device 9 associated with the mentioned transparent element 35 and/or an optical system 8, in connection with said connection means with the exterior, and forming at least a resistance in the form of a printed ring deposited in at least one face of a peripheral area of the transparent element 35 and connected to the current supply.

p. 6 lines 3-34

The mentioned visor element 10 is in a certain angle inclined outwards and upwards, between 0 and 15°, in respect of a central vision line of the image detector 5,

and said car gutter element 27 is in a certain angle inclined outwards and downwards, between 45° and 90°, in respect of a central vision line of the image detector ~~of image 5~~. Another characteristic of both configurations is that some of the more protruding zones of the visor 10 and/or car gutter elements 27 are at a certain distance of a ~~plan~~ plane in which the window 6 is disposed, not less than the diameter of the window 6.

The said housing 1 could be directly coupled to an exterior part of a vehicle, or even attached by means of a mounting adapter 18. In this second case, the mentioned visor element 10 and car gutter element 27 could be integrated around an opening 28 of said mounting adapter 18[.]. Said mounting adapter 18 includes positioning including ~~focussing~~ means and releasable fixation means for the fixation of said housing 1, possibly of various and different type depending on the application example, which will be properly explained later on, which in cooperation with said ~~focussing~~ positioning means and releasable fixation means ~~for the fixation~~ of said housing 1, guaranteeing ~~guarantees~~ a predetermined position of said opening 28 and visor 10 (FIGS. 3 and 9) and car gutter elements (FIGS. 8 and 9) in relation to the window 6, and releasable fixation means for the releasable fixation of said mounting adapter 18 to said external structure 36 of a vehicle.

In the case the housing 1 is directly coupled to an external structure 36 of a vehicle, said mounting could be executed in two ways, depending on if the visor 10 and car gutter elements 27 would be disposed in said external structure 36 of a vehicle or in the housing 1 itself. In the first case, said visor 10 and car gutter elements 27 would be integrated around an existing opening in said external structure 36 of a vehicle, said

external structure 36 including ~~fixing~~ positioning means and releasable fixation means for the fixation of said housing 1 and the external structure 36 of a vehicle, which in cooperation with said ~~fixing~~ positioning means and said releasable fixation means of the housing 1, ~~guaranteeing~~ guarantees a predetermined position of said opening and visor 10 and car gutter elements 27 in relation to the window 6. In ~~any of both cases~~ either case, the module fixation to the external structure 36 of a vehicle could be executed in several ways, for example configuration by form-fitting, an example thereof could be that the external structure 36 of a vehicle is a rear view mirror housing, previewing a cavity therein or the fitting of the housing 1 thereinto and a lid covering the cavity trapping an immobilizing in position the module within said cavity.

p. 7 lines 5-24

Concerning the releasable fixation means between the mounting adapter 18 and the housing 1, in the three preferred embodiments shown in the figures, this is made by means of at least a pair of elastic arms 21 ending in projections 22, for example in the form of a nail extending themselves from the mounting adapter 18, in order to laterally embrace the housing 1 and snap-fit fixate, by means of said projections 22, on shoulders existing in the housing 1. Obviously, any other fixation alternative would be possible, as for example the fixation by means of screws or form-fitting, in which case an internal face of the mounting adapter 18 could be provided with a configuration in which the housing 1 and the arms analogous to the ones described before, would fit in order to immobilize the housing 1.

With regards to the previously mentioned ~~focussing~~ positioning means between the adapter 18 and the housing 1, these comprise support members 24 (FIG. 8 and detail) integrated in the mounting adapter 18 (in case this adaptor is necessary) which are attached to a front part of the housing 1 with a view to maintain the visor 10 and car gutter elements 27 and said opening 28 at a predetermined distance from the window 6. Said support members 24 dispose at their ends of holes 25, in which stubs 23 which protrude from a part of the housing 1 are inserted. The tubular configuration 20 (see FIG. 9) previously described, would also help for the ~~focussing~~ positioning between the mounting adapter 18 and the housing 1, once it is connected exteriorly to the plug around said support 7 for optical system 8.

Response to Arguments

7. Applicant's arguments filed 2/24/2010 have been considered but they are not persuasive. On page 7, the applicant states that directly attaching a mounting adapter to an external structure of a vehicle without the need of additional parts is not described by the cited references. This particular language is not required by the claims and is therefore not responded to. On page 8, the Applicant states that Bingle et al. do not teach a visor or a gutter. The examiner agrees with this and has not relied on Bingle et al. for these elements. The Applicant states that the casing 16 of does not serve to attach the camera housing 11 to the vehicle, but rather the flanges 12d and 14f serve to attach the camera housing 11 to the vehicle. This is not persuasive because the flanges 12d, 14f are part of the camera housing, and can certainly be considered part of the

camera casing, even if they are a different part than element 16. Clearly, the camera housing 11 comprises elements that are used to attach the camera module to whatever structure it is to be attached to. The Applicant then admits that Asada et al. teach a visor and a gutter, and a bracket for attaching a camera module to a vehicle structure, but asserts that Asada et al. fail to cure the deficiencies of Bingle et al. Given that the Applicant appears to have just admitted that Asada teaches those same deficiencies, such an assertion is unpersuasive.

8. Note that in the current rejections, the examiner has flipped the references, i.e. Asada et al. in view of Bingle et al. instead of Bingle et al. in view of Asada et al. as in the previous Office Action.

Specification

9. The abstract of the disclosure is objected to because of the informalities listed above. Correction is required. See MPEP § 608.01(b).

10. The disclosure is objected to because of the informalities listed above. Appropriate correction is required.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claim 106, 113, and 114 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject

matter which applicant regards as the invention. These claims use the term "and/or" which renders the claims indefinite. That is, it is not clear whether the Applicant intends the claim scope to accord with "and" or "or". The examiner recommends replacing "and/or" in claims 106 and 114 with "and" because the specification does not disclose the associated claim elements conjoined with "or", only "and". Thus, in this case, "or" is broader than the disclosed "and" and would be new matter. The examiner recommends replacing "and/or" in claim 113 with "or" because the specification discloses the term "and/or" in conjoining the disclosed elements, and "or" is more broad.

13. Claims 108 and 116 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims set forth that the first and second releasable fixation members comprise said support for the optical system and a tubular configuration respectively. However, the support for the optical system and the tubular configuration are an alternate embodiment of the "focusing means" as set forth in the specification, which as the examiner has explained above is used synonymously with "positioning means" (see p. 7 lines 15-24, and note that these items are discussed as an alternate to or in conjunction with the support members 24 and stubs 23, which the applicant has called the first and second centering members). In the examiner's opinion, the applicant should change "first releasable fixation members" and "second releasable fixation members" to "first centering members" and "second centering members" respectively.

14. Claim 117 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 117 depends from claim 106, which makes it identical to claim 109. The examiner suspects that the Applicant intended for it to depend from claim 114.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 106, 110-114, and 118-121 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asada et al. (Japanese Patent Application Publication 2001-039243) in view of Bingle et al. (US PGPub 2006/0171704).

Regarding claim 106, Asada et al. teach an image acquisition module for monitoring applications of the external surroundings of a vehicle (a camera module that is mounted in the bumper of an automobile, see Figs. 1-8), comprising : a housing with an interior and a window closed by a transparent element (see Fig. 2, camera unit 1, par. 7); an electronic circuit accommodated in said housing and associated with connection means for supply and/or bidirectional signal exchange with the exterior (the unit in the housing is an electronic camera 1 which is used to generate images to display to the driver, par. 2; an electronic camera must comprise electronics and some

way to communicate the captured image data to whatever means displays the images to the driver); an image detector connected to said electronic circuit and opposed to said window (the electronic equipment unit is a camera 1 which faces the window element, see Fig. 2); a mounting adapter comprising an opening allowing light to pass towards said window (garnish 4 and bracket 5, see Figs. 2, 3; both have openings that allow light to pass through to the camera unit 1) and a visor element and a gutter element protecting said window from luminous incidence and from external agents (see Figs. 8, 9, and 11; referring to Fig. 8, the upper surface of the hole 4A is a visor and will protect the window from a luminous incidence, and the lower surface of the hole 4A is a gutter that will protect the window 24 from external agents; Fig. 11A shows that snow 24 or rain is caused to fall or run out of the window); and positioning means for positioning said mounting adapter with respect said window (see Figs. 2, 3; the examiner takes as positioning means the screws 16 and screw holding parts 17) and releasable fixation means for releasably fixing the module to an external structure of a vehicle (the garnish 4 and bracket 5 are attached to the bumper 2 of the vehicle as shown in Figs. 4 and 7; the examiner takes as the releasable fixation means the keys 12, the lobes 13, keys 10, screws 20, and brackets 11), wherein the housing and the mounting adapter comprise respective first and second releasable fixation members (screw holding parts 17, screws 16, and the holes in the housing into which the screws seat) and respective first and second centering members (screw holding parts 17, screws 16, and the holes in the housing into which the screws seat) cooperating with each other for releasable fixing the housing to said mounting adapter and for positioning the window with respect to said

opening, said visor element and said gutter element (see Figs. 2, 3), and the mounting adapter comprises releasable fixation portions for releasable fixing said mounting adapter to said external structure of a vehicle (the garnish 4 and bracket 5 are attached to the bumper 2 of the vehicle as shown in Figs. 4 and 7; the examiner takes as the releasable fixation portions the keys 12, the lobes 13, keys 10, screws 20, and brackets 11). However, Asada et al. does not teach that the interior of the housing is protected against at least moisture; that the window is hermetically closed; or that a support is attached to the housing to carry an optic system between said image detector and said window.

Bingle et al. teach an image acquisition module for monitoring applications of the external surroundings of a vehicle (imaging system for a vehicle, see title, abstract), comprising: a housing with an interior protected against at least moisture (camera module 10 comprises plastic camera housing 11 having portions that are laser welded or sonic welded together to seal the housing 11 to prevent water intrusion, par. 70) and a window hermetically closed by a transparent element (cover portion 20 of housing 11 comprises a transparent cover plate 22, par. 71; the housing 11 is hermetically sealed, par. 81, 84); an electronic circuit accommodated in said housing and associated with connection means with the exterior, for supply and/or bidirectional signal exchange (housing 11 comprises an image sensing device 18 connected to a circuit board 26, par. 71, 77; the image sensor connects to other circuitry through multi-pin connector 14a, par. 82); an image detector connected to said electronic circuit and opposed to said window (housing 11 comprises an image sensing device 18 connected to a circuit board

26, par. 71, 77; transparent cover plate 22 allows the image of the scene to pass therethrough and into housing 11 to camera 18, par. 71); a support attached to the housing to carry an optic system between said image detector and said window (lens system 24 is positioned within cylindrical portion 12a of camera portion 12 so as to receive light from cover 22, par. 78; the components of the camera module form an integral unit; therefore, the lens system 24 is attached to the housing 11); and positioning means and releasable fixation means to enable at least the focusing of said optic system (lens system 24 functions to focus the image onto sensor 18, par. 77-78) and the releasable fixation of the module to an external structure of a vehicle (mounting tabs 14f are used to attach the camera unit to the vehicle via fasteners, par. 81), wherein said window is associated with at least one protection device protecting it from external agents and from a luminous incidence, providing an appropriate light pass through said transparent element (the transparent cover plate 22 is associated with camera housing 28 which functions to substantially prevent or limit incident light from being received by camera 18 and interfering with the image received by camera 18 through transparent cover plate 22 and lens system 24, par. 78; the transparent cover plate 22 is associated with heating device 30 which defrost and defog the transparent cover plate, par. 71, 77, 86-89). Bingle et al. teach that sealing the camera module protects the electronics inside from environmental conditions and physical damage (par. 4, 70, 79, 84). Lens system 24 functions to focus the image onto sensor 18 (par. 77-78).

Therefore, it would be obvious to one of ordinary skill in the art to combine the sealing aspects of Bingle et al. to hermetically seal the camera enclosure including the

window of Asada et al. so that the camera unit could be protected from rain, snow, or dust. This would improve the reliability of the camera unit. Further, it would be obvious to one of ordinary skill in the art to combine the lens system of Bingle et al. with the camera unit of Asada et al. so that the scene could be accurately focused onto the image sensor of the camera unit. This would improve the quality of the images captured by the camera unit.

Regarding claim 110, Asada et al. in view of Bingle et al. teaches the module, according to claim 106, wherein said releasable fixation portions comprised in the mounting adapter for releasable fixing the mounting adapter to the external structure of a vehicle are selected from a group including snap-fitting elastic portions, screw receiving portions, and form-fitting fixation portions (Asada et al.: the garnish 4 and bracket 5 are attached to the bumper 2 of the vehicle as shown in Figs. 4 and 7; the examiner takes as the releasable fixation portions the keys 12, the lobes 13, keys 10, screws 20, and brackets 11).

Regarding claim 111, Asada et al. in view of Bingle et al. teaches the module, according to claim 106. However, Asada et al. in view of Bingle et al. as described above does not describe wherein said exterior structure of a vehicle is an exterior rear view mirror housing of a vehicle.

Bingle et al. teach mounting a camera module to an exterior rear view mirror housing of a vehicle (the camera module may be mounted in an exterior mirror assembly, or in an interior rearview mirror assembly, par. 76). One of ordinary skill in the art would appreciate that it would be fairly easy to adapt the camera mounting

method of Asada et al. to either of these applications. Further, the examiner points out that this claim is merely describing the intended use of the camera module, and as such, is not accorded patentable weight.

Therefore, it would be obvious to one of ordinary skill in the art to locate the camera unit of Asada et al. in view of Bingle et al. on an exterior rear view mirror of a vehicle so that a user could be provided with an electronic image of the surroundings of the vehicle from the vantage point of the exterior mirror. This could help the viewer see images of blind spots, and therefore increase the utility of the user.

Regarding claim 112, Asada et al. in view of Bingle et al. teaches the module, according to claim 106, wherein said visor element is in a small angle inclined outwards and upwards with respect to a central vision line of the image detector, said small angle being approximately within an interval from 0 to 15 degrees (Asada et al. Figs. 8, 9, 11A).

Regarding claim 113, Asada et al. in view of Bingle et al. teaches the module, according to claim 106, wherein the window is arranged in a plane and has a window diameter, and a distance between said plane and zones of the visor and/or gutter elements most protruding from said plane is not less than said window diameter (Asada et al. Fig. 11A).

Regarding claim 114, Asada et al. teach an image acquisition module for monitoring applications of the external surroundings of a vehicle (a camera module that is mounted in the bumper of an automobile, see Figs. 1-8), comprising : a housing with an interior and a window closed by a transparent element (see Fig. 2, camera unit 1,

par. 7); an electronic circuit accommodated in said housing and associated with connection means for supply and/or bidirectional signal exchange with the exterior (the unit in the housing is an electronic camera 1 which is used to generate images to display to the driver, par. 2; an electronic camera must comprise electronics and some way to communicate the captured image data to whatever means displays the images to the driver); an image detector connected to said electronic circuit and opposed to said window (the electronic equipment unit is a camera 1 which faces the window element, see Fig. 2); a mounting adapter comprising an opening allowing light to pass towards said window (garnish 4 and bracket 5, see Figs. 2, 3; both have openings that allow light to pass through to the camera unit 1) and a visor element protecting said window from luminous incidence and from external agents (see Figs. 8, 9, and 11; referring to Fig. 8, the upper surface of the hole 4A is a visor and will protect the window from a luminous incidence and from external agents; Fig. 11A shows that snow 24 or rain is caused to fall or run out of the window; Fig. 10A shows that rain runs around the visor portion); and positioning means for positioning said mounting adapter with respect said window (see Figs. 2, 3; the examiner takes as positioning means the screws 16 and screw holding parts 17) and releasable fixation means for releasably fixing the module to an external structure of a vehicle (the garnish 4 and bracket 5 are attached to the bumper 2 of the vehicle as shown in Figs. 4 and 7; the examiner takes as the releasable fixation means the keys 12, the lobes 13, keys 10, screws 20, and brackets 11), wherein the housing and the mounting adapter comprise respective first and second releasable fixation members (screw holding parts 17, screws 16, and the holes

in the housing into which the screws seat) and respective first and second centering members (screw holding parts 17, screws 16, and the holes in the housing into which the screws seat) cooperating with each other for releasable fixing the housing to said mounting adapter and for positioning the window with respect to said opening, said visor element and said gutter element (see Figs. 2, 3), and the mounting adapter comprises releasable fixation portions for releasable fixing said mounting adapter to said external structure of a vehicle (the garnish 4 and bracket 5 are attached to the bumper 2 of the vehicle as shown in Figs. 4 and 7; the examiner takes as the releasable fixation portions the keys 12, the lobes 13, keys 10, screws 20, and brackets 11). However, Asada et al. does not teach that the interior of the housing is protected against at least moisture; that the window is hermetically closed; or that a support is attached to the housing to carry an optic system between said image detector and said window.

Bingle et al. teach an image acquisition module for monitoring applications of the external surroundings of a vehicle (imaging system for a vehicle, see title, abstract), comprising: a housing with an interior protected against at least moisture (camera module 10 comprises plastic camera housing 11 having portions that are laser welded or sonic welded together to seal the housing 11 to prevent water intrusion, par. 70) and a window hermetically closed by a transparent element (cover portion 20 of housing 11 comprises a transparent cover plate 22, par. 71; the housing 11 is hermetically sealed, par. 81, 84); an electronic circuit accommodated in said housing and associated with connection means with the exterior, for supply and/or bidirectional signal exchange (housing 11 comprises an image sensing device 18 connected to a circuit board 26, par.

71, 77; the image sensor connects to other circuitry through multi-pin connector 14a, par. 82); an image detector connected to said electronic circuit and opposed to said window (housing 11 comprises an image sensing device 18 connected to a circuit board 26, par. 71, 77; transparent cover plate 22 allows the image of the scene to pass therethrough and into housing 11 to camera 18, par. 71); a support attached to the housing to carry an optic system between said image detector and said window (lens system 24 is positioned within cylindrical portion 12a of camera portion 12 so as to receive light from cover 22, par. 78; the components of the camera module form an integral unit; therefore, the lens system 24 is attached to the housing 11); and positioning means and releasable fixation means to enable at least the focusing of said optic system (lens system 24 functions to focus the image onto sensor 18, par. 77-78) and the releasable fixation of the module to an external structure of a vehicle (mounting tabs 14f are used to attach the camera unit to the vehicle via fasteners, par. 81), wherein said window is associated with at least one protection device protecting it from external agents and from a luminous incidence, providing an appropriate light pass through said transparent element (the transparent cover plate 22 is associated with camera housing 28 which functions to substantially prevent or limit incident light from being received by camera 18 and interfering with the image received by camera 18 through transparent cover plate 22 and lens system 24, par. 78; the transparent cover plate 22 is associated with heating device 30 which defrost and defog the transparent cover plate, par. 71, 77, 86-89). Bingle et al. teach that sealing the camera module

protects the electronics inside from environmental conditions and physical damage (par. 4, 70, 79, 84). Lens system 24 functions to focus the image onto sensor 18 (par. 77-78).

Therefore, it would be obvious to one of ordinary skill in the art to combine the sealing aspects of Bingle et al. to hermetically seal the camera enclosure including the window of Asada et al. so that the camera unit could be protected from rain, snow, or dust. This would improve the reliability of the camera unit. Further, it would be obvious to one of ordinary skill in the art to combine the lens system of Bingle et al. with the camera unit of Asada et al. so that the scene could be accurately focused onto the image sensor of the camera unit. This would improve the quality of the images captured by the camera unit.

Regarding claim 118, Asada et al. in view of Bingle et al. teaches the module, according to claim 114, wherein said releasable fixation portions comprised in the mounting adapter for releasable fixing the mounting adapter to the external structure of a vehicle are selected from a group including snap-fitting elastic portions, screw receiving portions, and form-fitting fixation portions (Asada et al.: the garnish 4 and bracket 5 are attached to the bumper 2 of the vehicle as shown in Figs. 4 and 7; the examiner takes as the releasable fixation portions the keys 12, the lobes 13, keys 10, screws 20, and brackets 11).

Regarding claim 119, Asada et al. in view of Bingle et al. teaches the module, according to claim 114. However, Asada et al. in view of Bingle et al. as described above does not describe wherein said exterior structure of a vehicle is an exterior rear view mirror housing of a vehicle.

Bingle et al. teach mounting a camera module to an exterior rear view mirror housing of a vehicle (the camera module may be mounted in an exterior mirror assembly, or in an interior rearview mirror assembly, par. 76). One of ordinary skill in the art would appreciate that it would be fairly easy to adapt the camera mounting method of Asada et al. to either of these applications. Further, the examiner points out that this claim is merely describing the intended use of the camera module, and as such, is not accorded patentable weight.

Therefore, it would be obvious to one of ordinary skill in the art to locate the camera unit of Asada et al. in view of Bingle et al. on an exterior rear view mirror of a vehicle so that a user could be provided with an electronic image of the surroundings of the vehicle from the vantage point of the exterior mirror. This could help the viewer see images of blind spots, and therefore increase the utility of the user.

Regarding claim 120, Asada et al. in view of Bingle et al. teaches the module, according to claim 114, wherein said visor element is in a small angle inclined outwards and upwards with respect to a central vision line of the image detector, said small angle being approximately within an interval from 0 to 15 degrees (Asada et al. Figs. 8, 9, 11A).

Regarding claim 121, Asada et al. in view of Bingle et al. teaches the module, according to claim 114, wherein the window is arranged in a plane and has a window diameter, and a distance between said plane and zones of the visor and/or gutter elements most protruding from said plane is not less than said window diameter (Asada et al. Fig. 11A).

Allowable Subject Matter

17. Claims 107, 109, and 115 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS HOGUE whose telephone number is (571) 270-5089. The examiner can normally be reached on Mon. - Thurs., 8:00 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DH
Examiner
5/27/2010
/Jason Chan/
Supervisory Patent Examiner, Art Unit 2622